

What Is Claimed Is:

1. A system for performing temporal order independent numerical computations on data comprising:
a computation block;
a buffer block, wherein the buffer block includes at least one first buffer for storing data values utilized in an addition operation by the computation block and at least one second buffer for storing data values utilized in a multiplication operation by the computation block;
wherein, upon a condition, data values are transferred from the buffer block to the computation block for processing.

2. The system according to claim 1, wherein the first and second buffers are FIFO ("First In First Out") buffers.

3. The system according to claim 2, wherein the computation block computes an IDCT ("Inverse Discrete Cosine Transform").

4. The system according to claim 3, wherein eight first buffers are utilized, each corresponding to a column of an 8x8 block of data.

5. The system according to claim 3, wherein the IDCT is a 2-D IDCT.

6. The system according to claim 1, further including a temporary random access memory ("TRAM") block, wherein the TRAM block stores partial results of the computation between clock cycles.

7. The system according to claim 6, wherein upon the condition, a partial result is transferred from the TRAM to the computation block.

8. The system according to claim 7, wherein the computation block generates a new partial result utilizing data values transferred from the buffer block and the partial result transferred from the TRAM, the new partial result being then stored back in the TRAM.

9. A system for performing temporal order independent numerical computations on data comprising:

a computation block;

a buffer block, wherein the buffer block includes at least one first buffer for storing data values utilized in an addition operation by the computation block and at least one second buffer for storing data values utilized in a multiplication operation by the computation block;

a TRAM block, wherein the TRAM block stores partial results of the computation between clock cycles;

wherein, upon an occurrence of a predetermined condition, data values are transferred from the buffer block and the TRAM block to the computation block for processing.

10. The system according to claim 9, wherein the computation block computes an IDCT ("Inverse Discrete Cosine Transform").

11. The system according to claim 9, wherein eight first buffers are utilized, each corresponding to a column of an 8x8 block of data.

12. The system according to claim 9, wherein the computation block computes an IDCT ("Inverse Discrete Cosine Transform").

13. The system according to claim 9, wherein the IDCT is a 2-D IDCT.

14. A method for performing temporal order independent computations comprising:

receiving a data value for processing;

determining whether the data value corresponds to one of an addition operation and a multiplication operation;

if the data value corresponds to a multiplication operation, storing the data value in a multiplication buffer;

if the data value corresponds to an addition operation, storing the data value in an addition buffer; and

outputting a data value stored in the multiplication buffer and an associated data value stored in the addition buffer to a computation block for processing.

15. The method according to claim 14, further comprising storing partial results generated by the computation block in a TRAM.